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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,351	05/27/1999	SCOTT MCNEILL	NU-027-PAP	6361
26338	7590	02/08/2005	EXAMINER	
MERLE W. RICHMAN, III P.O. BOX 3333 LA JOLLA, CA 92038			SHAH, CHIRAG G	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/321,351	Applicant(s) MCNEILL ET AL. 	
	Examiner Chirag G Shah	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 1999.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 12, 18, 24, 30, 36, 42, 43, 49 and 50 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7-11, 13-17, 19-23, 25-29, 31-35, 37-41, 44-48 and 51-55 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 rejected under 35 U.S.C. 102(e) as being anticipated by Bellenger et al (U.S. Patent No. 6263016).

Referring to claim 1, Bellenger discloses in claim 1 and in col. 2, lines 57-64, col. 3, lines 5-29 and col. 4, 27-56 of a method of determining and managing digital transmissions on a network and determination is made whether a voice signal digitization includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal [as disclosed in col. 25, lines 40-45, the call modem conditions its receiver to receive INFO AND detect Tone A];

b) when an answer tone is present [as disclosed in col. 25, lines 40-65], performing the steps of:

i) locating a first phase reversal in the voice signal [Tone A phase reversal as disclosed in col. 46-48],

ii) locating a second phase reversal in the voice signal [Tone B phase reversal as disclosed in col. 25, lines 49-57], the second phase signal [Tone B phase reversal] being

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the next consecutive phase reversal in the voice signal after the first phase reversal [Tone A phase reversal as disclosed in col. 25, lines 40-65];

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal [as disclosed in col. 25 lines 49-55, The Tone B phase reversal shall be delayed so that the time duration between receiving the Tone A phase reversal at the line terminals and the appearance of the Tone B phase reversal at the line terminals is about 40ms. Tone B shall be transmitted from another 10ms after the phase reversal], and

iv) indicating that the voice signal includes a modulated data signal when the determined time interval is between a predetermined range of time values [as disclosed in col. 25, lines 66 to col. 26, lines 16 and col. 17, 10-44, if the duration of the call modem's Modulation Data (MD) signal, as indicated in the previous INFO1c, is zero, the modem shall transmit signal PP, otherwise, the modem shall transmit signal MD for the duration indicated in the previous INFO1c, which is period not to exceed 500ms.] as claim.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 12, 18, 24, 42 and 49 rejected under 35 U.S.C. 103(a) as being unpatentable over Bellenger et al (U.S. Patent No. 6263016) in view of Date et al. (U.S. Patent No. 5,959,677).

Referring to claims 6 and 18, Bellenger discloses in claim 1 and in col. 2, lines 57-64, col. 3, lines 5-29 and col. 4, 27-56 of a method of transmitting and managing digital transmissions on a digital network and determination is made whether a voice signal digitization includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone is present in the voice signal [as disclosed in col. 25, lines 40-45, the call modem conditions its receiver to receive INFO AND detect Tone A];

b) when an answer tone is present [as disclosed in col. 25, lines 40-65], performing the steps of:

i) locating a first phase reversal in the voice signal [Tone A phase reversal as disclosed in col. 46-48],

ii) locating a second phase reversal in the voice signal [Tone B phase reversal as disclosed in col. 25, lines 49-57], the second phase signal [Tone B phase reversal] being the next consecutive phase reversal in the voice signal after the first phase reversal [Tone A phase reversal as disclosed in col. 25, lines 40-65];

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal [as disclosed in col. 25 lines 49-55, The Tone B phase reversal shall be delayed so that the time duration between receiving the Tone A phase reversal at the line terminals and the appearance of the Tone

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B phase reversal at the line terminals is about 40ms. Tone B shall be transmitted from another 10ms after the phase reversal], and

iv) indicating that the voice signal includes a modulated data signal when the determined time interval is between a predetermined range of time values [as disclosed in col. 25, lines 66 to col. 26, lines 16 and col. 17, 10-44, if the duration of the call modem's Modulation Data (MD) signal, as indicated in the previous INFO1c, is zero, the modem shall transmit signal PP, otherwise, the modem shall transmit signal MD for the duration indicated in the previous INFO1c, which is period not to exceed 500ms.

Bellenger fails to disclose of performing the steps of demodulating/packetizing and transmitting digital packets across the network.

Date teaches of a digital data transmission system in figure 1. Date discloses in claim 1 and figure 3 of: a) demodulating the voice signal to generate a digital data signal [as disclosed in claim 1 and figure 3, receiving portion demodulates that audio signal to generate a digital data signal];

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network [as disclosed in figure 1 and in col. 6, lines 12-32, each of the reading control portion is connected to the packet generating portion 9 by the switch 7, the packet generating portion adds channel identifiers to the data and generates frames for satellite transmission]

c) transmitting the digital packets across the network [as disclosed in col. 6, lines 30-32]; converting the digital packets into a received digital signal [as disclosed in claim 1]; determining whether the received signal includes a digital

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data signal [as disclosed in claim 1]; when the received digital signal includes a digital data signal modulating the received digital signal into a modulated data signal [as disclosed in figure 5 and claim1].

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Bellenger to include the features of demodulating, packetizing and transmitting the digital packets across the network as taught by Date in order to provide a digital data transmission system in which real-time transmission of audio signal can be performed without reduction in audio quality.

Referring to claims 12, 24, 42, and 49, Bellenger discloses in claim 1 and in col. 2, lines 57-64, col. 3, lines 5-29 and col. 4, 27-56 of a method of transmitting and managing digital transmissions on a digital network and determination is made whether a voice signal digitization includes a modulated data signal, the method comprising the steps of:

a) determining whether an answer tone/digital voice signal is present in the voice signal/modulated data signal [as disclosed in col. 25, lines 40-45, the call modem conditions its receiver to receive INFO AND detect Tone A];

b) when an answer tone/digital voice signal is present [as disclosed in col. 25, lines 40-65], performing the steps of:

i) locating a first phase reversal in the voice signal [Tone A phase reversal as disclosed in col. 46-48],

ii) locating a second phase reversal in the voice signal [Tone B phase reversal as disclosed in col. 25, lines 49-57], the second phase signal [Tone B phase reversal] being

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the next consecutive phase reversal in the voice signal after the first phase reversal [Tone A phase reversal as disclosed in col. 25, lines 40-65];

iii) determining the time interval between the location of the first phase reversal in the signal and the second phase reversal in the voice signal [as disclosed in col. 25 lines 49-55, The Tone B phase reversal shall be delayed so that the time duration between receiving the Tone A phase reversal at the line terminals and the appearance of the Tone B phase reversal at the line terminals is about 40ms. Tone B shall be transmitted from another 10ms after the phase reversal], and

iv) indicating that the voice signal includes a modulated data signal when the determined time interval is between a predetermined range of time values [as disclosed in col. 25, lines 66 to col. 26, lines 16 and col. 17, 10-44, if the duration of the call modem's Modulation Data (MD) signal, as indicated in the previous INFO1c, is zero, the modem shall transmit signal PP, otherwise, the modem shall transmit signal MD for the duration indicated in the previous INFO1c, which is period not to exceed 500ms].

Bellenger fails to disclose performing the steps of:

- a) encoding the voice signal into a digital data signal comprising the modulated data signal by linearly quantizing the voice signal;
- b) packetizing the coded voice signal into a plurality of digital packets for transmission over the digital voice network
- c) transmitting the digital packets across the network;
- d) converting the digital packets into a received digital signal;
- e) determining whether the received signal includes a coded voice signal; and



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f) when the received digital signal includes an encoded data signal decoding the received digital signal into a modulated voice signal by dequantizing the received digital signal.

Date teaches of a digital data transmission system in figure 1. Date discloses in figure 7 and in col. 1, lines 46-67 of encoding audio signal into a digital data signal by linearly quantizing the voice signal so more audio signals may be transmitted;

b) packetizing the digital data signal into a plurality of digital packets for transmission over the digital voice network [as disclosed in figure 1 and in col. 6, lines 12-32, each of the reading control portion is connected to the packet generating portion 9 by the switch 7, the packet generating portion adds channel identifiers to the data and generates frames for satellite transmission]

c-f) transmitting the digital packets across the network [as disclosed in col. 6, lines 30-32]; converting the digital packets into a received digital signal [as disclosed in claim 1]; determining whether the received signal includes a digital data signal [as disclosed in claim 1]; when the received digital signal includes a encoding data signal decoding the received digital signal into a modulated data signal [as disclosed in figure 5, 7 and claim 1].

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Bellenger to include the features of encoding the voice signal into digital signal by linearly quantizing, packetizing and transmitting the digital packets across the network as taught by Date in order to increase throughput by sufficiently allowing more compressed audio data to be transmitted.

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5. Claims 30,36,43 and 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Bellenger et al (U.S. Patent No. 6263016) in view of Date et al. (U.S. Patent No. 5,959,677) as applied to claims 6, 12, 18, 24, 42 and 49 above, and further in view of Yang et al. (U.S. Patent No. 6,369,737).

Referring to claims 30, 36, 43 and 50, Bellenger in view of Date fails to disclose the steps of: a) normalizing the voice signal; and b) converting the normalized voice signal into a digital floating point signal. Yang teaches for converting a low dynamic range analogy signal to a large dynamic range floating-point-digital representation. Yang discloses in col. 13, lines 1-25 of analog voice signal to be normalized. Yang further discloses in table 2 and col. 14, lines 12-31 of an example of wide dynamic range, floating-point binary analog-to-digital conversion assuming the analog signal is normalized. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Bellenger in view of Date to include converting analog signal into a digital floating point signal as taught by Yang in order have dynamic range greater than the input range of the signal.

***Allowable Subject Matter***

6. Claims 2-5, 7-11, 13-17,19-23, 25-29, 31-35, 37-41, 44-48 and 51-55 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**Any response to this action should be mailed to:**

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**Or faxed to:**

(703)305-3988, (for formal communications intended for entry)

**Or:**

(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 6:45 to 4:15, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs  
February 2, 2005

  
**Ajit Patel**  
**Primary Examiner**